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"BE PREPARED AGAINST CHEMICAL AIR RAID ATTACKS"

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(Translation from Russian)

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## INTRODUCTION

The Soviet people carry on a just national war against the attacks of the bloodthirsty fascists.

Having broken basely and treacherously all treaties, Hitler threw his wild fascist hordes into a new adventure. Nothing sacred exists for these gangsters. Their aim is to enslave all peoples, to rob and to kill.

Hitler's hordes invaded Soviet Russia in order to replenish their depleted stores. Hitler wants to take away the land from our peasants, the factories and plants from our workers, and he is bent upon the destruction of our cities. He wants to make us his slaves. But this shall never happen!

The iron hand of our 200 million Soviet people will strangle the mad fascist monster. This war with the insolent enemy must be carried on by the entire country, by every Soviet citizen, young and old. This is a national war, a deadly war against a vile enemy!

By a decree of July 2, 1941, the Soviet of Russian Commissars charged the Osoaviakhim - a mass defense organization of Soviet patriots - with the organization and combat preparation of all Soviet workers, from 16 to 60, against air raids and chemical warfare.

The entire population of Soviet Russia must be organized and prepared to repel the attacks of enemy aircraft, so that the work in our factories and plants may go on uninterrupted. Every citizen of the Soviet Union must realize his responsibility and must take an active part in the anti-aircraft defense of his country.

## CHAPTER I

### PROTECTION AGAINST DEMOLITION AND FRAGMENTATION AERIAL BOMBS

#### Action of Demolition and Fragmentation Aerial Bombs

Demolition bombs are used for the demolition of buildings and constructions, and also for the destruction of the population.

Charged with a specific type of explosives, a demolition bomb is more destructive the more explosives it contains and the heavier its weight is. In modern warfare, demolition bombs used for bombing usually weigh between 50 and 250 kilograms. In some instances, heavier demolition bombs might be used.

The explosion of a bomb is caused by a special mechanism or fuse; demolition bombs usually have a delayed-action fuse, that is the fuse causes the explosion only after the bomb has penetrated a building or fallen to the ground. Some types of demolition bombs explode only a day or two after landing, or even longer.



Having penetrated into a building, a demolition bomb may go through several stories and explode inside, causing great damage. If a demolition bomb strikes the ground, it creates a crater, a deep pit, and a mass of earth, stones, dust and bomb splinters are thrown up.

The explosion of an aerial demolition bomb is accompanied by a tremendous blast wave, the velocity and striking force of which may bring about great destruction.

Demolition bombs explode into very few fragments, but these are usually very large, red-hot, and coming into contact with inflammable materials create fires. Usually a fire starts directly where the bomb falls.

In some cases, together with demolition bombs are used fragmentation bombs, which shatter into many fragments -- each a source of danger to the population. The splinters from a fragmentation bomb fly with a sharp, whining sound and are active at a distance of 50 to 60 meters from the place where the bomb has exploded. The fragments do not penetrate brick and heavy timber walls. The weight of fragmentation bombs is from 8-10 to 50 kilograms.

#### SHELTERS

Protection against aerial demolition and fragmentation bombs can be found in bomb shelters. Bomb shelters are special constructions which are safe from demolition, should a bomb explode over them or fall nearby; they are not penetrated by splinters from fragmentation bombs (and not even by bombs of certain weight, if the shelter is securely constructed); they are also safe from instantaneous fires.

Various basement and underground places are adapted as shelters, or they are specially constructed underground. Shelters in a dwelling are usually provided in the basement according to instructions from the local air raid protection organization (PVO)

The shelters are used in accordance with strictly laid down rules. A shelter warden with several assistants from among the occupants of the dwelling enforce these rules and see that a shelter is not overcrowded.

Rules for using the shelter are:

1. Strict order at entering the shelter and at proceeding into one of its compartments, following the instructions from wardens.
2. Carrying out orders given by the warden and his assistants as to conduct in the shelter and helping them with work in serving the shelter.
3. Refraining from unnecessary walking through the shelter or its compartments.
4. Eating only in designated places in order to keep the shelter clean; removing left-over food.
5. When lights go out, remaining quietly in assigned places, waiting for orders from shelter warden.



6. No smoking and no lighted candles are allowed in the shelter.
7. Leaving shelter is permitted only in organized order, under instructions from the warden.

In populated places bomb shelters cannot always be provided. To ensure the collective security of the population, simple shelters are built, where people can get under cover. The most simple <sup>ones</sup> are the dugouts or trench-shelters.

Trench-shelters are dug in the ground in narrow ditch-trenches. They give protection from splinters, bullets and blast.

For protection against poison gas, people seeking shelter in a dugout wear gas masks. Dugouts should be roofs with loam and covered by a layer of soil no thicker than 0.6 meter.

Dugout-trenches can be constructed in parks, gardens, squares, boulevards, etc. They should not be placed in too close proximity to each other (no less than 10 meters in between), as there might be danger of simultaneous contamination of several trench shelters.

To prevent danger from falling walls, trench shelters should be as far as possible from buildings. The space between a building and a shelter must be equivalent to the height of the building.

Trench shelters are constructed on a zigzag pattern. The level section must not be longer than 5 meters, to avoid casualties from bullets and splinters. The narrower and deeper the trench, the safer it is. The entrance should have steps leading into the trench. Along the entire wall-length benches or planks can be arranged to accommodate people.

Citizens take shelter in the trenches at the "Air Raid Danger" signal.

#### WHAT TO DO IF WOUNDED (FIRST AID)

Every citizen of the Soviet Union must know what to do and how to help others in cases of wounds, fractures, burns and contamination by poison gas.

##### First Aid Kit

It is desirable that every citizen have a first aid kit. The kit consists of a gauze bandage with two gauze and cotton pads, packed tightly in a paper and in a rubberized wrapping and enclosed in a gauze cover (there are simpler ways of packing). One pad is sewed to the bandage a few inches from the end; the other is so adjusted in the bandage that it can be moved. The bandage and pads are sterilized before packing, in order to kill the microbes which may infect the wound.

In order to open the packet it is taken up in the left hand in such a way that the gauze cover is on top; then, with the right hand, the string from the cover is pulled out and the rubberized packet is taken out.



The rubberized cover is broken along its length and the bandage, wrapped in parchment paper, is removed. The bandage is opened and unfolded at the place where the second pad is adjusted. Then the bandaging can be started.

#### Bandaging a Wound.

For bandaging a wound the following rules must be observed: do not touch the wound with your hands or anything else; do not wash the wound; do not attempt to remove splinters.

Before the actual bandaging takes place, (before the unwrapping of the bandage) it is necessary to uncover the wound, removing the victim's clothes in such a way as not to hurt the victim. If clothes and shoes are hard to remove, it may be necessary to cut them - if possible, along the seams.

Having uncovered the wound and unwrapped the bandage, this is what has to be done:

Holding the bandage in the right hand, and the end of the bandage in the left, move the second pad with the right hand at such a distance from the first that one pad is at the opening of the wound and the other at the extreme end of it; if the wound has only one opening, both pads are put over this opening, one on top of the other.

Do not touch the side of the pad that goes directly over the wound. On the reverse side of the pad runs a red thread which indicates the side to be used for moving the pad.

When the second pad is adjusted at the right distance from the first (in a double wound), each pad is put directly over the corresponding wound opening. The pads are fastened with a roll of bandage which is rolled with the right hand, unwinding from the right.

Do not bandage the wound too tightly, as the bandage may press upon the wound. Nor should one apply the bandage too loosely, as the bandage may roll off. The bandage should be tight only when there is much bleeding.

The free end of the bandage is fastened with a safety pin. If no pin is available, the end of the bandage is split and tied.

After bandaging a victim, arrange the wounded part of his body in a comfortable position: a wounded arm is eased by means of an arm sling; under a wounded head or leg is placed a coat or some other soft object.

When no individual first aid packet is on hand, one can use plain bandages, gauze and absorbent cotton sold in drug stores.

#### Stopping Arterial Bleeding.

If the blood is from an artery (bright red and comes in spurts), it is necessary to stop the bleeding before the wound is bandaged.

To stop the bleeding from an arm or from a leg, a tourniquet is applied



by means of a piece of rope, a handkerchief, a leather belt or a towel. The arm or leg is tied just above the bleeding part, and this stops the flow of blood to the wound.

In order not to bruise the skin, a pad or some soft material is placed under the tourniquet.

Placing on the wounded arm (or leg) a handkerchief used for a tourniquet, wrap it around the limb several times, tie the ends, place a small stick within the tie and twist it to one side until the bleeding stops. After this the wound can be bandaged the regular way. A tourniquet should not be left on for more than two hours, or the limb goes dead. One should be very careful removing the tourniquet.

If nothing is available for a tourniquet, the bleeding must be stopped by pressure against the artery which supplies blood to the wound. The artery can be located by its pulsation. At the shoulder the pressure is applied from the inner side, in the cavity between the muscles; at the thigh, from the inside, not far from the groin.

While applying pressure, one must look around for a piece of rope or a handkerchief to use as a tourniquet, because it is impossible to apply pressure with the fingers for a long time.

If it is not possible to make a tourniquet or apply pressure, an ordinary bandage can be used, binding it tightly, so as to press down on the blood vessels in the wound. Before bandaging, it is advisable to raise the wounded arm or leg and put something under it; this sometimes lessens the bleeding considerably.

If the blood from the wound runs slowly and evenly, not in spurts, then the bleeding can be stopped with an individual packet bandage. All that is necessary is to press the pads down tightly over the wound and bind it securely.

As a result of a fall or a severe blow, the victim may have a fracture. The victim suffers great pain at the least movement, the broken limb often changes its shape, and where the bone is broken the ends can be felt moving under the skin.

In giving first aid to a victim with fractured bones, remove his clothes; stop the bleeding if it is present, and bandage the wound; then make the victim comfortable and have him lie quietly until medical help arrives.

#### Transportation of Victims

Victims often have to be removed from attacked areas. The Sanitation Squads and commands use stretchers for that purpose, but citizens who do not belong to organized civilian defense groups must carry out victims in their arms. It is best for two people to do it, using one of the following methods (picture 4):



1. Two people kneel on one knee at the side of the victim lying on the ground (or floor); one man passes his hands under the victim's back, the other under the victim's knees and calves; the victim puts his arm around the neck of the nearest bearer.
2. One man stands at the head of the victim and passes his hands under the victim's armpits, careful not to press on his chest; the other, turning his back to the victim, takes hold of the victim's legs below the knees (4B); this method is best for carrying an unconscious victim.
3. Two men interlock hands and form a seat for the victim.

## CHAPTER II

### PROTECTION FROM INCENDIARIES

Incendiaries are charged with incendiary materials which ignite upon impact. The burning of incendiaries may vary depending upon the chemical agents contained in the bomb, and its detonation.

A bomb that is used most often is the thermite bomb - a mixture of powdered aluminum and iron oxide. When it burns, the mixture produces a very ~~high~~ temperature which reaches 3000°; at this temperature iron is melted and burnt through.

With the thermite bomb electron is often used - an alloy of aluminum mixed with several other metals.

The temperature produced by burning electron is the same as produced by burning thermite. There is also an electron thermite incendiary bomb, the case of which is made of electron and the charge of thermite.

Some incendiaries are filled with inflammable liquids, yellow phosphorus and other substances (sometimes in combination with thermites). Phosphorus and some other inflammable liquids ignite spontaneously when exposed to the air.

Dropped on a building, incendiaries penetrate through the roof and spread fire in the loft. Some bombs, depending upon their weight and striking velocity may penetrate several stories, especially if the bombs have solid front parts.

Upon impact, the chemical agents in a thermite or in an electron-thermite bomb ignite, burn, and liberate the molten iron. If the case is electron, that, too, burns and melts.

A thermite burns with a bright yellowish flame, and gives off a small quantity of light smoke.

An electron-thermite burns at first like a thermite (when chemical agents of the thermite are burning), then a blue flame appears with heavy



White smoke which covers the whole place with a white deposit (electron is burning).

A small thermite or electron thermite bomb burns from 3 to 5 minutes. During this time it may ignite even hard-inflammable materials.

Melted thermite and electron will burn the roof and ceiling through and penetrate into the lower stories of a building, creating fires.

Incendiary projectiles of the thermite type are also used in modern warfare - these consist of a long rod with a thermite arrangement. The weight of various aerial incendiary bombs differs, but the enemy uses mostly small incendiaries weighing from 1 to 2 kilograms.

#### HOW TO PROTECT YOUR HOME FROM FIRE

During an air raid fires may start simultaneously in many places; city and district fire brigades cannot cope with all the fires, they will first take care of the most dangerous conflagrations. The population itself must organize to fight fires caused by incendiaries.

In order to prevent mass fires, it is imperative to take precautionary measures at once and immediately extinguish starting fires. The Fire started by a bomb should be taken care of first, and not the bomb itself; otherwise, trying to extinguish the bomb, one may lose control over the fire. Of course, if possible, both fires should be extinguished simultaneously.

The population itself will find it possible to cope with fires, if precautionary measures are carried out and simple fire-fighting equipment is available (a supply of water in barrels, buckets, etc., sand and ashes in boxes, fire extinguishers, suction pumps, etc.).

The civilian defense observation squads which go into action at the "Air Raid Warning" signal cannot always detect and extinguish all incendiaries. It is important, therefore, that the occupants of a building be trained in fighting fires. Fires may be caused not only by incendiary but also by explosive bombs. And there also might be arson caused by enemy sabotage.

All this demand unremitting vigilance and responsibility on the part of every citizen, who must become familiar with all methods of fire fighting, and who must carry out faithfully all rules and regulations for preventions of fires, prescribed by the fire department.

#### PREVENTIVE MEASURES AGAINST FIRES

The first rule in fire prevention is the clearance of attics, stairways, corridors, entrances and courtyards of inflammable objects and materials, and of all unnecessary trash. No pantries or storerooms are



allowed on stairways, in corridors and in passages. It is important to remember that observation of all these measures will lessen the danger from fires, ensure firemen quicker entrance into the building, and permit safer evacuation of occupants in case of fire.

Attics are the most dangerous source of fire, and, therefore, the clearance of the attic must get special attention. Windows in an attic should be glazed to prevent drafts. Doors in an attic must fit tightly and at the same time open easily in case of incendiary bomb danger.

To prevent instantaneous fires, attic floors should be covered either with sand (5 cm. in thickness), or with slag (10 cm.), but the additional weight should not be too excessive, or it may cause a cave-in.

Doors in apartments and on landings must not be boarded.

At the signal "Air Raid Danger", all inflammable objects (clothing, tablecloths, rugs, mats, mattresses, bedclothes, books, curtains and window shades) must be removed and put away in closets and boxes out of the way. This measure is compulsory for all apartments on the three upper stories of tall buildings, and for all houses no taller than three stories.

Drying of laundry in attics is forbidden.

Heating stoves and chimneys must be in good condition. Prescribed rules for the heating of stoves must be carried out, and also rules for the use of heating and lighting apparatus -- the latter must be turned off when leaving the house.

Inflammable agents (kerosene, benzine) should not be stored in dwellings in large quantities. The amount allowed by the fire department should be kept in a metal container and closed tightly.

Electric connections must be kept in good order, so that there be no missing plugs and insulators or broken wires.

Fire plugs in the building must be kept free from encumbrances and in good condition. It is desirable to have a fire extinguisher on each landing.

Barrels, buckets and tubs filled with water and boxes with sand and ashes must be placed in attics and on all landings in apartment houses.

#### METHOD OF FIGHTING INCENDIARIES AND THE RESULTING FIRES

Means and methods for fighting fires and incendiaries available to the population, vary. Each method, separately or in combination with others, has as its purpose the prevention of mass fires. One should be trained not only to know the right methods, but also to detect the fire quickly, to use immediately fire fighting equipment, and to attack the fire bravely and with determination.

WATER is the basic means for fighting fires and also incendiaries, thermites and electron-thermites. It is best to use water from pumps



and fire hydrants, as they supply a steady stream of water. In fighting incendiary bombs, the stronger the pressure of the water, the quicker a bomb is extinguished. For phosphorus bombs a spray of water is more effective, and it is produced by putting a finger to the nozzle of the water hose.

When no fire hydrants and pumps are available, water can be supplied by means of buckets passed on by a "chain" of people.

The most useful equipment for fire fighting in dwellings and establishments is the fire-plug, a branch from the main waterpipe, supplied with a valve-lock and screw with which a firehose can be attached to the plug.

Rules for using a fire-plug are very simple: one man holds the trunk of the firehose and approaches the fire, another man turns the valve and lets the water flow into the hose. It is not practical to direct a stream of water from a distance; it is advisable to work as near as possible to the fire.

A stream of water from a distance of 5 to 10 meters from the fire-plug will extinguish a large incendiary; the water should be played first upon the burning objects nearby and under the bomb, and then into the melting opening of the bomb itself.

Small incendiaries can be best extinguished by the use of hand-pumps (hydropult bucket, hydropult crane), with which the fire squad in a building is supplied. The technique is the same as in using a fire-plug, only one must get nearer to the bomb (from 2 to 4 meters), using for protection a door or a wooden shield with a handle (picture 5), etc. The stream of water must be even and uninterrupted. If explosions occur which indicate the presence in the bomb of electron and metallic oxides, a good method is to flood everything in the vicinity of the bomb, thus preventing the flying sparks from starting new fires.

Burning gaps should be flooded with buckets of water (or by water pumped with a fire fighting equipment), making certain that no hidden danger of fire remains.

SAND (and also soil, ashes and powdered clay) can also be used successfully in fighting thermite and electron-thermite bombs, especially for putting out fires caused by inflammable bomb substances like benzine, kerosene, naptha, etc., and for localizing and extinguishing small fires. The incendiary agents in thermite and electron-thermite bombs cannot be extinguished by sand, but sand can temporarily minimize and localize the burning area. The thermite continues to burn underneath the sand (as it can burn without oxygen), but since it is isolated from everything around it, it cannot cause more fires.

Sand should be dry and without lumps and dirt. It is best to keep sand in boxes containing about 50 kilograms and use it by means of shovels. Sand is also used to fill bags containing from 3 to 5 kilograms, with the contents of these bags it is possible to smother a bomb from a distance. Using a safety shield, one also can easily smother a small fire with sand, adding more sand now and then where it begins to melt.



When sand is used in fighting incendiary and electron-incendiary incendiaries, the surface underneath the bombs cannot always be protected. The incendiaries may burn the floor and fall through to the ceiling on the lower floor. Sand spread under the bomb helps to eliminate this danger. For this, several layers of sand (from 3 to 5 cm. thick) are piled up near the bomb, and, with a shovel or a pitch-fork, it can be pulled or rolled onto the bomb and then scattered with more sand while it is burning itself out.

Sand, soil and ashes are also good as a spread when incendiary contents escape from a bomb which got stuck in a roof or in a ceiling.

**FIRE EXTINGUISHERS** - portable and hand operated - can be used successfully in fighting fires. Hand operated extinguishers can be brought into action instantaneously and swiftly. They being very helpful in extinguishing small fires. They discharge either a fire-extinguishing foam or a fire extinguishing powder.

Foam extinguishers are very good in cases when naphtha, kerosene or benzine are inflamed. These liquids are lighter than water and do not mix with water, therefore, they continue to burn on the surface of the water. The foam, however, being lighter than the inflammable liquids, covers the burning surface, cool it off and cuts off the supply of oxygen necessary for burning. That is why foam extinguishers are successfully used in extinguishing fires caused by benzine, kerosene, etc., discharged from bombs.

Powder extinguishers are safe for extinguishing burning electric equipment; unlike water, they are not electric conductors and will not cause shock.

#### Immersion Incendiaries in Water.

The method is: approach swiftly the burning incendiary, pick it up on a pitchfork or shovel, or take it by the stabilizer and toss it into a bathtub, barrel, bucket or washtub, filled with water.

#### Removing Incendiaries.

If removed from inside a building an incendiary (not over 10 cm. high, not melted, or only just ignited, or the remains of a bomb), pick it up with a pitchfork, iron shovel, iron tongs or hook and throw it into the street, a fireproof landing, a fireplace, a sand box or a bucket lined with a 5-6 cm. thickness of clay.

The scattered burning particles left behind by an incendiary must be carefully cleared away. A bomb thrown into a sandbox or a bucket must be watched until it has burned itself out. In all instances where incendiaries have been removed, it is necessary to have them under observation; unburnt particles must be picked up with shovels, deposited into buckets and taken outside (it is best to bury them in the ground).



## PREVENTION FROM BURNS WHEN HANDLING INCENDIARIES

Hands must be protected by tarpaulin gloves moistened with water. When no tarpaulin clothes are available, quilted pants, jackets and boots should be worn. Eyes should be protected with special glasses and the rest of the face with a wet handkerchief. A gas mask is good protective equipment. A trained person who knows how to use a gas mask and a protective (wooden) shield does not need any other protection.

### General Rules for Fighting Fires.

If it is impossible to extinguish an incendiary bomb and the resulting fire, and the occupants of a building cannot themselves cope with the situation, the district or city fire brigade is called out either by telephone or by a messenger (through the staff or house land and said district organization), indicating place, scope of the fire, location and the correct address.

Up to the arrival of the firemen, occupants of the building must do everything to limit the danger of the fire by carrying out general rules. Every citizen must know the following rules. The basic parts of the building - walls and pillars - must be protected first to prevent cave-ins. In the same order come passages and corridors where people must pass around.

It is best to start fighting a fire from a place far position) where the fire can be prevented from spreading. Feeling the fire, if possible. One must also provide for a safe exit. If much smoke is present, one should bend to the floor and even crawl.

Putting off the inflow of fresh air into a burning place will prevent the spreading of the fire.

If the building has a fire-pump and a fire hose, it insures <sup>their</sup> timely and correct use. *a* stream of water must be directed above the burning object, so that the water, streaming down, will cover a larger burning surface.

Gas and electricity must be shut off. If electric wires are on fire, the flame should be smothered with sand, dry clothing or covers. No water should be used on live electric wires.

Sand or soil can also be used to extinguish fires on landings, caused by kerosene and benzine. It is best to smother the fire with felt covers or blankets or any other thick materials, in order to cut off the supply of air to the fire. Covers can also be used to extinguish small burning objects.

## WHAT TO DO FOR INJURIES CAUSED BY BURNS

Burning clothing on a person must be extinguished at once. When a person's clothes are on fire, a blanket or a coat should be thrown over them even the person should be thrown to the ground, if necessary, in order to beat out the flames.

If there is no one to help, a person whose clothes are on fire must



lie down on the floor or ground and rolling, try himself to extinguish the flames. Under no circumstances should a person whose clothes are on fire, run; running will fan the flames and cause more serious injuries.

When the flames are small, the victim should be ~~covered~~ <sup>doused</sup> with water and carefully undressed. If clothing sticks to the burned places, do not tear it off, cut it on.

When heavy burns with ~~shaking~~ <sup>bleeding</sup> occur, bind the wounds with sterilized bandages and send the victim to a hospital.

If the burns are not too serious, but the skin is swollen and blistered, apply compresses moistened in soda solution (a tablespoon of baking soda to a glass of water) before the victim is sent to a medical post. Good, also, are compresses of very strong tea which contains tannin, or of ~~ammoniacal~~ <sup>ammoniacal</sup> acids of potassium. Blisters must not be opened by anyone but the medical personnel.

In light cases burns cause reddening, swelling and acute pain. All of which pass quickly. To allviate the pain, vaseline, fat, or butter (unsalted) are used.

For eye burns, the lower lids are pulled down and cotton dipped in melted butter (unsalted) is applied. The eyes then are washed with a solution of soda.

Burns caused by phosphorus should be immersed in water; if this is not possible, compresses of water or of a weak solution of ammoniacal acids of potassium may be applied.

### CHAPTER III

#### PROTECTION FROM WAR GASES

##### ACTION OF WAR GASES AND THEIR DETECTION

War gases are used in air raid attacks by means of aerial bombs and special devices in order to contaminate entire areas and expose to danger the unprotected population and animals.

Chemical agents in aerial bombs are either liquids or solids. When a bomb explodes, the chemical agents are disseminated in the air and become either poison gas or smoke or vapors; the sprayed chemical substances form droplets as they fall to the ground and gradually evaporate.

Chemical agents which when released fully or almost fully, ~~mix~~ <sup>mix</sup> with the air and evaporate in a comparatively short time, are called nonpersistent gases; those which evaporate slowly and retain their combat properties for a long time are called persistent gases.

Persistent gases are used to contaminate an area which, with the various objects in it, becomes the source of contamination to unprotected people and animals.



According to their effect on the human body, chemical agents are usually divided into four groups: choking gases, irritants, blister gases and "all poisonous" (nerve and blood poisons).

CHOKING GAS (phosgene) acts mostly on the breathing organs and, in serious cases, causes flooding of the lungs.

IRITANTS (indemite, chloracetophenone) cause extreme irritation of the mucous membrane of the nose and nasal passages, and also of the throat and bronchial tubes - some gases irritate the eyes and cause copious weeping - these are called tear gases.

BLISTER GASES (mustard gas, lewisite) affect the skin, eyes and the breathing organs.

The "ALL-POISONOUS" gases (hydrogen cyanide and carbon monoxide) penetrate through the breathing organs into the blood and affect the entire human system.

The above mentioned properties indicate only special characteristics of the various groups of war gases. It is important to remember that many of the war gases, according to circumstances, may exert different effects, and this depends upon the length of time war gas has been inhaled, the amount that penetrated into the system, the concentration (gas vapor, smoke, spray), and from a variety of many other causes. Many chemical agents, by their very nature, may give rise to different effects. As for instance, the basic property of mustard gas and lewisite is skin infection, yet they affect the respiratory organs and eyes and may poison the entire system.

The effect of blister gas upon the skin is that of reddening, itching and burning - in lighter cases; in more serious cases blister and wounds appear which require prolonged medical care, if large surfaces of the skin have been infected, death may follow.

Blister gas is most effective in liquid form - when liquid gas comes in direct contact with the human body. The vapors of blister gas, too, are dangerous if the skin is exposed to them a long time, especially during hot summer weather.

In effecting damage to the respiratory system, blister gas vapors give rise to hoarseness and dry cough. In serious cases, suppurative inflammation of the mouth, larynx and lungs results and may cause death.

In eye infection, reddening and swelling of lids and eye, also a feeling of "sand" in the eyes and fear of light; then mucous and pus, in many cases blindness.

Contaminated food and water cause cramps, vomiting and, sometimes, diarrhea.

Analyzing the properties of chemical agents, it is important to remember that the enemy may use some new chemical agents or some novel



combinations. However, the danger from new chemical agents and new devices must also not be overestimated. As the experience of the World War has shown, anti-chemical defense organizations can quickly perfect the means of defense.

There might, however, be occasions when the signal "Air Raid Warning", for one reason or another, has been given too late, as when, for instance, there has been a sudden night attack, or when a camouflaged chemical air attack has taken place, or when chemical agents have been sprayed from a great height, or when the observation post has been mortally wounded or killed. Or a person may suddenly find himself in the sphere of war gas dissemination, as he nears a contaminated area. In all such cases it is important to don a gas mask immediately, not waiting for a signal, and warn others of the chemical danger.

In an air attack, every citizen must observe the following rules: if a suspicious odor is detected, not usual for the given place, or if suspicious drops and smoke are present, the gas mask must be put on immediately.

#### GAS MASKS

A gas mask is the basic individual protective means against war gases, that is, it protects every person individually; while means of protection like shelters protect simultaneously groups of people.

A gas mask protects the respiratory organs and the eyes of a person from war gases; the rubber mask (helmet), covering the face protects it from gas vapors and from the danger of direct contact with liquid war gas. For individual protection of the whole body from blister gases, there are different kinds of protective clothing and shoes. For giving first aid to blister gas cases special chemical kits are available.

The most prevalent gas masks are those of the filter type. In Soviet Union the filter gas mask BH is widely used. These masks come in a variety of types (picture 6).

The action of a filter gas mask is based upon the clearance of war gas properties from the contaminated air. The filtering process takes place in the gas mask proper every time the person wearing the mask breathes.

#### PROTECTIVE PROPERTIES OF GAS MASK BH

In the gas mask BH the air is cleared of all known war gas properties which may be disseminated in the air in the form of gas, vapor, or smoke. The only exception is carbon monoxide from which it is necessary to seek protection by way of special (insulated) gas masks, or by attaching to the filter mask supplementary sockets with special absorbers.

The protective capacity of a BH gas mask, as in all filter type masks, depends upon many factors. The protective strength of a filter gas mask is determined first of all by the type of war gas it has to eliminate from the air and by its concentration. The absorbers and the filter of a gas mask react differently to different types of war gas.



BH filter gas mask protects from phosgene uninterruptedly for the duration of several hours, it is also very successful with mustard gas.

#### ASSEMBLY AND USE OF GAS MASK BH

If a gas mask has not yet been used, the bottom of the canister is tightly closed with cardboard, and if the canisters are kept separately from the face masks, the neck of the canister is screwed with a metal cap. This prevents damage to the absorbers when gas masks are stored. The cardboard and the cap are removed when the gas mask is used.

In order to connect the canister with the coiled tube, the screw from the tube is screwed on to the neck of the canister as far as it goes, so that when the tube is lowered the eye lenses of the mask will face the side to which the seam of the canister is turned.

To check it, the canister is taken in the right hand, bottom up, and the coiled tube with the gas mask lowered freely.

The canister is placed on the left side of the carrier bag, with its seam to the partition; if the canister is placed on the right side, the seam should face the right part of the bag (in majority of bags the part for the canister is to the left, that is, it is placed on the left side of the bag when carried on the left side).

New face masks are powdered with talc, which prevents the rubber from deterioration. The inside of a face mask should be wiped out with cotton or a clean cloth, otherwise the talc may irritate the eyes.

If the gas mask has been used, it is necessary to ascertain if it has been disinfected. For disinfection, the inside of the face mask and the valve chamber are cleaned with cotton dipped in denaturated alcohol.

When a gas mask is issued, it is important to select the right size of the face mask. The size is indicated on the face mask proper - on the tape extension at the temple. To determine the necessary measurements (Picture 7), the head of the person is measured with a tape (a) at the curved line passing over the chin, cheeks and highest point of the head, (b) at the line connecting the ear openings and passing over the eyebrows. If combined measurements are 95 cm. or a little above, then Size 1 face mask is required; if the combined figures is from 95.5 cm. to 99 cm., size 2 is required; from 99.5 to 103.5 cm., size 3 is required; and if combined figures are 104 cm., then size 4 is required.

Having selected the right size of the face mask, it should be fitted snugly to the face and head by adjusting the buckles on the tape. The mask must fit well on the face, but not press upon it.

The lenses of the gas mask must first be wiped with a clean cloth or a handkerchief to a transparency and then worked with special anti-dipping "pencil", making a few streaks on the surface of each glass (Picture 111); then one breathes on the glasses and with a small piece of flannel or with the soft part of a clean finger rubs the streaks to a soft film, covering the entire surface evenly. After this, one again breathes on the lenses; if the lenses have been correctly treated they remain transparent.



Then the strap of the carrier bag must be adjusted to one's height. For this one adjusts the strap over the right shoulder (the bag on the left side with the lock outside) and either shortens or lengthens it in such a way that the upper side of the carrier bag is on the level with the belt (waist band).

#### CARE OF THE MASK

A gas mask should be kept in good condition, as it will give protection from war gases only if it functions correctly.

A gas mask must be protected from sharp impacts and concussions to prevent bending of the metal parts of the gas mask, breaking of the lenses, and the displacement of the absorbers.

Gas masks deteriorate from dampness and from extreme temperatures. Dampness will rust the canister and other metal parts of the gas mask and cause the coiled tube to mould. Extreme heat or cold will deteriorate the rubber. Therefore, a gas mask must be kept in a dry place, but not near a central heating radiator or a stove. It is best to hang a gas mask by its buckle or to put it on a shelf.

If the carrier bag for some reason has become damp or wet (rain), the gas mask should be taken out and the bag dried.

Nothing but the gas mask should be placed into the carrier bag, as the gas mask, the face mask especially, may get damaged.

#### RULES FOR WEARING, PUTTING ON AND REMOVING GAS MASK BH

A gas mask is worn in one of the following three positions: "On the march" — from the very moment of an "Air Raid Danger" signal, but when no immediate danger is yet present; "In readiness", if there is immediate danger, and "combat action" — when a chemical air raid attack is taking place (Picture 8).

For wearing a gas mask in position "on the march", the shoulder strap of the carrier bag is run over the right shoulder, on top of one's clothing; the carrier bag with the gas mask is placed on the left side, valve up and closed, the upper part of the carrier bag on the level with the upper part of belt (waist band) — the belt should be adjusted with the help of the buckle, if this has not been done before.

In position "in readiness", the gas mask is adjusted at the signal "Air Raid Warning".

At this signal, it is necessary:

1. To unfasten the lock of the carrier bag
2. To take the cord out and put it around one's waist, fastening it by its right ring
3. To have head gear ready for removing and the ear caps partially loosened

When the gas mask is taken out of the carrier bag, the lenses (if they have transparency), if it



For "combat action", the gas mask is adjusted at the signal of chemical danger or at the warning "Attack", or if one detects war gas. In order to put the gas mask on (Picture 9), one should follow this procedure:

1. Stop breathing.
2. Open the bag and take the face mask out (helmet), holding it by the thicker sides of the chin part in such a way that the thumbs remain outside and the rest of the fingers are inside.
3. Bring the face mask up to the face, putting chin out forward and, not changing the position of fingers, place the inner chin part next to the chin.
4. Put the face mask on, moving fingers under the lower tapes (in the helmet - at its sides) from the bottom up; when fingers reach up to head gear, raise it by the peak with thumb and index fingers, and with the rest of the fingers pull tapes (head harness) to the back of the head. If head gear has no peak, take it off before putting the mask on and place it alongside, or thrust in under the tapes of the carrier box, or put it between knees, etc.
5. Put head gear on.
6. Exhale and breathe normally.

Immediately following position "on the march", the gas mask is put on in the same sequence, only the cord is fastened last.

When the face mask is put on correctly, the lenses are right in front of the eyes, the sides of the mask fit snugly to the face, but the frames of the lenses and the rubber must not press; there should be no tangled tapes in the head harness.

A gas mask must be put on quickly (in 5 seconds), but never at the expense of accurate procedure. One must learn to perform long hours of work in a gas mask by way of systematic training.

In a gas mask one must breathe through the nose, quietly, evenly and deeply.

A gas mask should be taken off (only when ordered by the PVO (anti-aircraft defense) leader), according to the following methods:

1. Raise the head gear with your right hand and with the left grasp the outlet of the face mask in such a way that the thumb and index fingers are around the neck of the mask (Picture 10);
2. Pulling mask slightly down, free chin and take mask off with an upward movement of the hand.
3. Put the head gear on.

After this, turn mask inside out, dry with a handkerchief or a cloth and leave it out for some time for complete drying.

Gas mask is folded in the following way.

1. Take mask by the frames of the lenses with right hand, and hold the head harness with the left, or put mask on the back of the left hand.
2. Fold mask also inside, covering right lenses, then likewise covering the left lenses with the head harness, and, finally, once more at the neck.



3. Pressing the folded mask to the outlet with the right hand, take the coiled tube at the middle with the left hand and place it at the bottom of the carrier bag in such a way that the exhaust valve is turned to the left and the chin part of the face mask is on top; this insures quick and correct taking out of mask from the bag when the gas mask is to be used.

## MASS PROTECTION FROM WAR GASES

### GAS SHELTERS

Many people, because of poor health or age (old people, small children) cannot use gas masks; others might have no gas masks. In such cases the only protective means from war gases is gas shelters - specially equipped places, insulated from war gases.

Taking in consideration the fact that the enemy may use both chemical and explosive bombs, gas shelters are combined with bomb shelters. The protection from war gas in these shelters is made possible by sealing the shelter hermetically and by equipping it with a filter ventilation system.

Sealing a shelter hermetically consists in closing up all openings and crevices and in special construction of entrances and exits.

The entrance into such a shelter is constructed by way of a small corridor with special doors. These doors prevent the penetration of war gases into the interior of the shelter and also protects it from bomb fragments, fire and the striking force of explosions.

In all shelters equipped for protection from war gases the rules of conduct must be strictly observed as given in Chapter I (Shelters and Trenches). Special attention is paid to the upkeep of hermetic conditions and the purity of the air.

The greatest need for gas shelters arises when there is danger of mass contamination by blister gases, like mustard gas for instance. Any closed building can be used for protection from gas sprayed from aircraft.

### PREVENTIVE MEASURES USED IN PASSING THROUGH A CONTAMINATED AREA

There might be occasions after an air raid when a part of the population may be compelled to leave homes and even shelters - for instance, when a fire breaks out or when a demolition bomb causes much destruction, etc. In some cases it may be necessary to pass through contaminated areas, and all necessary precautions must be carried out according to issued rules and regulations.

The population is evacuated from attacked areas in an orderly and organized manner under supervision of air raid wardens and members of civilian defense groups. These squads prepare passages on the uncontaminated area beforehand to prevent people from coming in direct contact with war gases (walking on contaminated sidewalks, roadways, etc.).

Designated passages are covered with planks, layers of plywood, etc. Sand, sawdust and other granular materials, and snow in the winter can be



used instead of planks. Passages can also be decontaminated with chloride of lime.

Every person who must pass through an area contaminated by persistent blister gases must take the following precautions:

1. Put a gas mask on at once, if it has not been done before.
2. Put on overshoes, rubber shoes, if these are not available, to protect shoes with plywood bound to the soles or with sack cloth or other heavy material wound around the shoes.
3. Wear a rubberized overcoat, a leather coat or some other over-clothing; women are recommended to wear slacks, or else they must fasten the skirts around their legs; it is best to wear a skiing outfit, raising the collar and winding a scarf around it; hands should be protected with gloves.

During passage through contaminated areas every person must follow strictly directions and orders from leaders in charge of the evacuation. One must move swiftly but not run and not go outside the safety of the passages. Care must be taken that one's clothing does not come in direct contact with walls, fences, bushes, etc.

Upon leaving the contaminated area it is necessary:

1. To remove gaiters or anything else worn for protection of shoes, not touching them with unprotected hands and carrying out instructions given by leaders.
2. To rub shoes carefully with chloride of lime especially provided at the end of the passage; when chloride of lime is not available, soil is used.
3. To remove coat and other outer clothing and keep it separately from gaiters or anything else worn for protection of shoes.
4. To remove gloves and gas mask and treat hands by means of the anti-chemical kit, finishing off with a thorough washing of hands with soap and water.

If leader advises, one must depart for treatment to the Decontamination post.

Face, eyes and other parts of body must not be touched until hands have been decontaminated.

Clothing and shoes left by the evacuating citizens are gathered and decontaminated by special squads of PVO (after which all is returned to owners).

#### FIRST AID FOR WAR GAS CASUALTIES

Promptly and correctly administered first aid (self-help and mutual help) in conditions when the enemy has used war gases is important. Every person who has breathed poisoned air, who has passed through areas contaminated by persistent gas, who has come in direct contact with contaminated objects, or who has been sprayed by gas must be considered a casualty of one or another degree. It must be remembered that some gases (phosgene) do not



at first cause any symptoms or that the symptoms are very light and pass quickly -- only to return later with a greater intensity.

Therefore, when there is any suspicion of gas contamination, even when no direct symptoms are in evidence, it is necessary at once to take precautionary measures, by means either of self help or mutual help (first aid). These measures may not only prevent or lessen the danger of contamination, but may even preclude it.

#### FIRST AID (SELF HELP AND MUTUAL HELP) MEASURES FOR GAS CASUALTIES

No matter what type of gas has been used by the enemy, a gas casualty in a sphere of contamination must be immediately helped to put on a gas mask, and, at the first opportunity, he should leave by himself or be removed into fresh air (into a shelter).

If a person has become a gas casualty having a gas mask on, then the gas mask is probably not adjusted right or is faulty; the fault should be corrected or a new gas mask provided.

#### REMOVING A GAS CASUALTY'S CLOTHING

When a gas casualty has been assisted or brought in from a contaminated sphere or from a contaminated area, his clothes should be removed at once, if they have been permeated with war gas, for they will cause contamination of the air and, penetrating through the victim's clothes, may affect his skin. The same may happen if mustard gas permeates shoes. Clothing and shoes should be removed carefully, so as not to contaminate unprotected parts of the body, and then sent away for decontamination in a special chamber.

#### FIRST AID (SELF HELP AND MUTUAL HELP) IN CASES WHERE PERSISTENT GAS AFFECTS THE SKIN

It is necessary to remember that liquid mustard penetrates underthings in 30 to 40 seconds; thin cloth -- in 1 to 2 minutes; thick woollens (overcoats) - in 4 to 5 minutes; top boots - in 5 to 7 minutes; leather soles - in 15 to 20 minutes. Clothing permeated with mustard gas vapors also may cause serious skin injury. Having all this in mind and removing clothing in time, one may prevent injury of skin or, at least, lessen it.

Persistent gases that have come in direct contact with the skin should be removed quickly and rendered harmless before they have penetrated into the skin (best, during first 10-15 minutes after contamination).

Complete removal and decontamination of persistent gases from the skin is done at special decontamination points where victims should be directed. However, taking in consideration the urgency of immediate decontamination when drops of war gas come in direct contact with open parts of the body, it is important that at least preliminary steps in decontamination should be taken at once by way either of self help or mutual help.

Drops of war gas are removed from the skin by means of gauze and cotton, taking care not to sweep and not to rub them into the skin. Then the contaminated skin is washed with sponges (balls made of gauze and cotton).



dipped in kerosene and benzine.

Kerosene, benzine (and also turpentine) dissolve mustard gas and lewisite and are good for removing war gases from the skin. Tampons dipped in kerosene, benzine or turpentine are used for twenty minutes, taking care to change the used up tampons for fresh ones every now and then, after which the skin is washed with warm water and soap.

The used tampons are dangerous, since dissolved mustard gas retains its properties. Therefore they should be destroyed (burned).

It is most convenient in first aid (self help or mutual help) to render mustard gas and lewisite harmless to the skin by using the individual anti-chemical kit.

Individual Anti-Chemical Kit (Picture 11) is a small box containing:

1. Gauze balls (Picture 11) with small boxes inside containing special liquid for rendering mustard gas and lewisite harmless.
2. Ampoules to be used for inhaling when respiratory system is affected by choking gas (Picture 11).
3. Gauze for washing infected eyes (Picture 11).

Some anti-chemical kits (small metal boxes) have large ampoules instead of the gauze balls. Each kit (of whatever type) has instructions with rules for using it.

The balls are used thus: a ball is held over the contaminated skin and squeezed tightly in the fist. With the tip of the fingers pressure is applied to the center of the ball in order to crush the small box it contains. If this does not succeed, the box is punctured with a small metal wedge provided in the kit - (Picture 11).

The squashed moist ball is then used, carefully and quickly, to wipe off the contaminated skin surface (2-3 times); then the thread holding the ball is broken on one side, the gauze is unfolded, the remains of the box removed and the gauze used to cleanse the skin until the gauze is dry. Each contaminated part should be cleansed 2-3 minutes. If the gauze dries before that (it usually dries in 1-1½ minutes), another ball should be used in the same way.

The liquid should not be rubbed into the skin, but applied with easy and careful motions. The balls should not be used for the eyes; when using it on the face, care should be taken not to spray it into the eyes.

The ampoule for inhaling, used when the respiratory system is affected, is used in the following way: the end of the ampoule closed with a gauze cap is squeezed with two fingers--the liquid will run out and saturate the gauze. It should be inhaled for 1 to 2 minutes. If the pain does not abate, or if it returns, another ampoule can be used in 5 to 10 minutes; and yet a third in another in 5 to 10 minutes.

For washing the eyes, gauze is dipped in clean water or in a solution of boric acid (a teaspoonful in a glass of water). If eyes are irritated, under no circumstances must they be rubbed with the hand or a handkerchief.

## FIRST AID WHEN RESPIRATORY ORGANS ARE AFFECTED

A person who has inhaled phosgene should not walk even if there are no immediate after-effects. Complete rest and warmth should be provided for him. At the first opportunity, he should inhale oxygen (from an oxygen pillow); he should drink hot tea and coffee. Smoking, of course, is out of the question.

## FIRST AID FOR INFECTION BY NERVE AND BLOOD POISONS

The symptoms are dizziness, nausea, vomiting, shortness of breath. The victim should be placed on his back, his clothes loosened, his chest and other parts of the body massaged with or without alcohol; cold compresses should be applied to forehead and temples.

If breathing has stopped, artificial respiration should be applied by those who have had training in it. If vomiting has occurred, the victim's mouth must be cleaned with gauze rolled on a stick or on the index finger.

Artificial respiration (if it does not give positive results) should not be stopped until there is adequate proof that the victim is dead.

It is important to remember that artificial respiration should not be given to a phosgene victim whose breathing has become labored, as it will cause more harm than good.

All war gas casualties should be sent to hospitals after first aid has been rendered.

## CHAPTER IV

### DUTIES OF CITIZENS AND REGULATIONS FOR THEIR CONDUCT DURING AIR RAID WARNING SIGNALS

When night falls, all buildings using electricity must be carefully blacked out. For this purpose blackout shades should be used. They can be bought in stores or they can be made by the occupants themselves from solid materials or from blankets, rugs, paper pasted in several layers and blackened on the inside with soot, etc. They should be made to fit the windows and must be kept in a state of readiness. In basement apartments and on lower floors wall fitted outside shutters which do not let the light through can be used instead of blackout shades. These shutters may also protect (to some degree) from bomb splinters.

It should be remembered that sources of light not blacked out will disclose to the enemy important objectives upon which he can exercise a direct hit. However, under no conditions must blackout arrangements be left on during the day and electricity used, as this would cause needless waste of electricity.

### CIVILIAN DEFENSE UNIT

A building may be damaged as a result of air raids. In order to cope



with the situation, each building must have a specially trained unit of civilian defense workers.

A civilian defense unit is organized in four squads, from 5-9 people in each, that is a unit should have no less than 30-40 people. The unit is headed by a unit commander and each squad has a squad leader. There is also in each unit a property warden.

In very large buildings the personnel of the squads and, therefore, of the unit itself must be enlarged. Small buildings, where there are too few occupants to form a unit, combine with neighboring houses; in this case one civilian defense unit takes care of several small buildings. In apartment houses, civilian defense units and air raid wardens' posts are made up from occupants whose ages are: women - from 13 to 50; men - from 16-60. To this unit also belong porters, janitors, stove-tenders, char-women and electricians.

The unit commander and the squad leaders must get special training in schools or take the air raid protection courses given by Ocoevikhim -- (civilian defense).

Each squad has its special work. Observation and protection squad is used by the unit commander to supervise other squads and for liaison work with the district air raid defense and with other neighboring units. This squad has an observation post which keeps the commander of the unit informed as to what is taking place in the building during an air raid. The same squad warns occupants of a building of chemical danger.

For keeping order on its territory this squad posts guards at the entrance doors of a building and in its shelter. Members of this squad enforce blackout rules, direct people to shelters; assist people from burning homes; protects the property of citizens who were compelled to leave their homes and property taken out from burning apartments; rope off and protect attacked areas, etc.

The fire fighting squad extinguishes fires in the building. For the detection of fires on time, this squad posts guards on attics, on landings and in other places which may prove dangerous when a fire breaks out. If necessary, the entire personnel of the unit and all able-bodied occupants of the building take part in fighting the fire. The fire fighting squad assists the regular city fire brigades to fight big fires.

Decontamination work in a building is done by the decontamination squad. If the enemy has used war gas, this squad makes a reconnaissance of the contaminated area, marks it off and carries out immediate decontamination work in the building.

Passages for the evacuation of occupants are decontaminated first. When the district decontamination unit arrives, the squad assists with the work.

First aid to victims of an air raid is given by the medical sanitation squad. (This squad is trained by the Red Cross and by the Red Half-Moon organizations; when "Air Raid Danger" signal is sounded, this squad is included in the personnel of a civilian defense unit). Members of this



squad on duty at sanitation points and at sanitation posts assist and carry out victims from attacked areas, direct war gas casualties to decontamination points and take active part in the work of medical sanitation units which arrive at the attacked area.

Beside these four squads a civilian defense unit may also have a damage repair crew to carry out necessary repairs when water pipes, sewerage and electric wires are damaged in an air raid. This squad consists of plumbers, joiners, locksmiths who either work or live in the building. If the building is demolished, this crew does rescue work under the supervision of the unit commander and with the assistance of all able-bodied occupants of the building.

A civilian defense unit in a building is then the basic unit of the Air Raid Defense (PVO) organizations. Civilian defense units are first among all other Air Raid Defense organizations (PVO) to come to the assistance of the population when the enemy has struck from the air.

The combat functioning of a civilian defense unit in a building does not exclude, on the contrary it enhances the necessity of mass preparation of occupants in active civilian defense work. Occupants of a building are recruited for clearance work after an air raid, as for instance, to help in extinguishing fires, in demolition work, etc. Members of a civilian defense unit (air raid wardens) must train occupants of a building in this work. The civilian defense unit, under supervision of the Air Raid Defense (PVO) commander of a building must carry out all practical work in preparation against air raid danger.

#### RULES FOR CONDUCT DURING AIR RAID SIGNALS

Order and details for the conduct of the population during air raid warning signals, just as the order of giving the signals, cannot be the same for all inhabited places. It depends to a great extent upon conditions in a given inhabited place.

It is necessary, therefore, to study air raid instructions and regulations given both by local organs of the Soviet government and by local organs of the Air Raid Defense.

Below are given typical rules, in order to present a general picture of air raid duties on the part of the population.

#### "AIR RAID DANGER"

In connection with the rising danger from air raid and in order to mobilize completely and effectively all available means and methods of the Air Raid Defense, "Air Raid Danger" signal is given in many populated places. "Air Raid Danger" warns the population that the threat of an air attack on the given populated place has become real.

When a state of danger has been announced in a populated place, all dwellings, establishments and enterprises, and all schools are organized for a 24-hour air raid defense duty. This is necessary for keeping order, enforcement of blackouts and timely warning of air raid danger. The person on



duty has at his disposal for use of one of the telephones in the building.

If electric lighting, inside and outside the building must be shut off all through the evening and night at the danger signal, then the men on duty take turns at the switches.

Load speakers and radio transmitters are used on a 24-hour basis, as the radio transmitters carry air raid defense instructions and air raid signals.

When a "state of danger" is announced, every citizen must carry out the following rules:

1. Have his gas mask, individual first aid kit and anti-chemical kit always with him.
2. Follow carefully announcements, orders and air raid warning signal and carry out instructions given to the whole population; memorize air raid warning signals (Picture 12).
3. Those who belong to civilian defense or Air Raid Defense (PVO) units should be ready at the air raid warning signal to present themselves at the assembly point of the unit on the area of which the air raid signal finds them.
4. Before switching the lights on in the evening, black out windows with blackout shades and check from the outside to see if light shows; on leaving apartment always put lights out - remember that the least violation of blackout rules will endanger the safety of the city (offenders who violate blackout rules are subject to criminal prosecution according to ~~War~~time laws).
5. Be vigilant! Enemy agents will try in every way to violate blackout rules in order to help the enemy; expose the vicious panic mongers, instigators and disguised enemies and turn them over to the militia.
6. Store up water (in buckets, watering cans, etc.) and also store sand in boxes and bags for fighting fires, and carry out strictly all fire prevention rules; inflammable substances (kerosene and benzine) should be cut down to one day's supply; drinking water must be kept in a covered container and changed every day.
7. Strengthen window panes with crossed strips of material in order to lessen force of explosive blast wave and prevent danger from flying glass (according to instructions given by local Air Raid Defense (PVO)).

#### "AIR RAID WARNING"

Announcement of "Air Raid Danger" does not yet mean that the enemy in the air is already on the way to the given populated point.

Immediate air raid danger is announced by the signal "Air Raid Warning."

The signal "Air Raid Warning" is given by means of powerful electric sirens and intermittent factory and engine whistles. The signals are carried on the radio transmitters with the announcement "Citizens, Air Raid Warning."

To duplicate the signals in establishments and enterprises pre-arranged signs are used, for instance, the electric bell system, etc.

At night, occupants of apartments, are warned of air raid danger by the



building wardens.

At the signal "Air Raid Warning", the entire population of a city and all air raid defense organizations are warned of the necessity to take immediate air raid defense measures and bring into combat readiness all available means.

First and basic rule is to observe calmness, order and discipline.

People overtaken by the air raid warning in the streets, with the exception of persons carrying out air raid defense duties, must take cover in the nearest shelters and protected places to which they are directed by the militia and by wardens from observation and protection posts.

Gas masks, everywhere, are adjusted in position "in readiness".

Members of Air Raid Defense and civilian defense units must immediately report at the assembly point of the unit on the area of which the air raid signal finds them, and, having completed preparations, take their places at observation, fire fighting or other posts.

The entire population takes cover in bomb shelters, gas shelters or in other protected places. Gas shelters are occupied by children, invalids and by all those who cannot wear masks.

Before leaving apartments for shelters and protected places it is necessary to extinguish fires in heating and cooking stoves (ranges); to turn off gas and electricity; to put out kerosene and primus stoves; to close tightly all doors, windows, shutters.

In establishments and enterprises work stops and all workers and employees go to shelters and protected places. In those enterprises where work does not stop all workers must observe strictly prescribed rules for conduct during an air raid.

School lessons are interrupted. Students are assigned to shelters and protected places.

Persons who find themselves in stores, dining rooms or other such places during air raid signals must obey orders given by the management of the place. These orders are displayed by way of special instructions for public information.

All transportation is stopped except for vehicles with special permits. Lights are turned off, passengers leave and seek shelter with other people overtaken by the air raid signal in the streets.

Air Raid Defense units, fire brigades, medical and technical units, and also transports with special permits are allowed to move on in all directions.

Every citizen must carry out instructions given by wardens of the Air Raid Defense organization (PVO).



### "CHEMICAL DANGER"

Beside air raid danger signals there are the chemical danger signals for which every populated place must be on the alert (in case the enemy uses war gas), and the "All Clear" (to notify the population that air raid danger is over).

Chemical danger signals are given by observation posts when they see explosions of chemical bombs or war gas drops sprayed by enemy aircraft. Neighboring posts take up the alarm only if the war gas spreads in their direction.

In this way, the chemical danger alarm, unlike the air raid alarm, remains local, that is, it affects only the district threatened with chemical danger and not the whole city.

The signal is given by repeated strokes against a metal disk or rail, or by some other prearranged sound effect, different by the character of its sound from air raid alarms.

On hearing the signal of chemical danger, all those who are not in shelters must immediately don their gas masks (change to the "combat action" position) and not take them off until air raid defense wardens announce that danger is over.

At the chemical danger signal doors in shelters close hermetically and the filter ventilation is brought into action.

After chemical danger signal has been given, entrance into and exit from shelters stop, as a rule, and ~~are~~ allowed only in exceptional cases when permission has been given by those in charge of the shelter.

Every one who detects war gas or suspicious smelling substances must immediately use available means of anti-chemical protection without waiting for the signal of chemical danger. He also must at once notify the nearest civilian defense or air raid defense unit. This unit, upon verifying the presence of war gas, will sound the chemical alarm.

### "RULES FOR CONDUCT AFTER THE "ALL CLEAR" SIGNAL

When the immediate danger of an air raid is over, the signal of "All Clear" is given. The "All Clear" is announced on the radio transmitters: "Danger of air raid is over. All Clear". In dwellings, establishments and enterprises the "all clear" is announced through Air Raid Defense wardens on duty.

If a city has not suffered from the air raid attack, normal life is resumed all through the city. If the enemy has succeeded in striking an objective, normal life is resumed only in those sections which have not suffered from the attack.

Clearance work is immediately begun in the destroyed sections of the city. Rules for conduct of the population in those sections are designated by the officer in charge of the work.

In sections where clearance work and fire fighting is taking place, all



able-bodied citizens must help with the work and carry out instructions given by PVO (Air Raid Defense) wardens.

Attacked areas are encircled by militia and by PVO observation and protection units, and no outsiders are allowed there.

All casualties are listed and given necessary medical aid.

The population of the districts which have not been attacked resume normal life, not forgetting, however, the possibility of repeated air raids and the necessity of being in a state of readiness to ward them off.

We must not forget that the vile enemy will try repeated bombings, hoping to find us unawares.

The German fascist bandits have cruelly refined their blood-thirsty methods in their fight against the peoples they have already conquered. But as an answer to one blow on Soviet cities, they receive a crushing triple blow.

Ours is a just fight. The enemy shall be crushed. Victory will be ours!

But now -- all out for the fight with the blood-thirsty fascist robbers!



ILLUSTRATIONS

- Picture 1            A closed trench shelter.
- Picture 2            Using an individual first aid bandage.
- Picture 3            Tourniquet.
- Picture 4            Transportation of a victim.
- Picture 5            The use of a wooden shield in extinguishing an incendiary.
- Picture 6            Gas mask BH  
                    a) face mask; 2-3-4-5) tapes of head harness; 6) exhaust valve; 7) inlet valve; 8) activated coal; 11) spring; 12) smoke filter; 13) bottom of canister; 14) shoulder strap; 15) anti-dimming pencil; 16) ring to fasten the tape of the guard; 17) compartment for the anti-chemical kit; compartment for protective cape; 19) spring-prop; 20) lock of carrier bag; 21) tape with guard; 22) guard.
- Picture 7            Head measurements for face mask.
- Picture 8            Gas mask in "combat position".
- Picture 9            Putting on a gas mask.
- Picture 10           Removing a gas mask.
- Picture 11           Individual anti-chemical kit.
- Picture 12           Air raid and chemical danger signals.

